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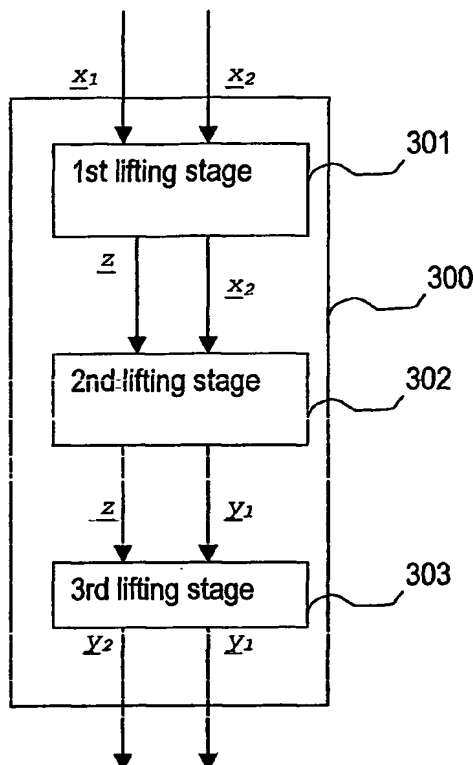
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(54) Title: **METHOD FOR TRANSFORMING A DIGITAL SIGNAL FROM THE TIME DOMAIN INTO THE FREQUENCY
DOMAIN AND VICE VERSA**



(57) Abstract: A method for transforming a digital signal from the time domain into the frequency domain and vice versa using a transformation function comprising a transformation matrix, the digital signal comprising data symbols which are grouped into a plurality of blocks, each block comprising a predefined number of the data symbols. The method includes the process of transforming two blocks of the digital signal by one transforming element, wherein the transforming element corresponds to a block-diagonal matrix comprising two sub matrices, wherein each sub-matrix comprises the transformation matrix and the transforming element comprises a plurality of lifting stages and wherein each lifting stage comprises the processing of blocks of the digital signal by an auxiliary transformation and by a rounding unit.



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